Claims



7. A user-site reception system for receiving TV and/or audio and/or data signals transmitted from a base station, said system comprising:

means for receiving downstream signals transmitted from a base station;

means for generating upstream signals to be transmitted to said base station using a high-precision signal which can be transmitted from said base station as a reference, said means for generaling upstream signals further comprising:

2. 8: A user site reception system according to claim,7, wherein said system is a reception-interaction system for a LMDS system, said reception system further comprising:

means for command reception from a base station; means for user interaction with said base station.

3. A system according to one of claims 7 or 8, said system comprising: means for exploiting the high-precision beacon signal, said mixer comprising:

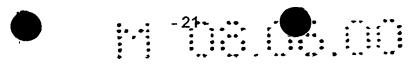
frequency processing means for upconverting the upstreams, given by modulator IF outputs, without any influence of parasitic phase noise and drift generated by receiver located conversion LOs;

means for downconversion of downstreams; means for suitable filtering of frequency bands.

means for downconverting said beacon signal using a-first local oscillator frequency;

means for upstream modulation of said upstream signal onto said downconverted signal;

means for upconverting said upstream modulated downconverted signal using said first local oscillator frequency, which has been used for downconverting.



4. 11. A reception system according to one of claims 7 to 10, comprising:

at least one upstream signals generating means according to one of claims
7 to 10;

means for processing of polarizations and frequency bands for up- and downstreams;

means for connecting to an IF frequency level to be connected to an inhouse distribution infrastructure;

means for connecting to an RF frequency level to be connected to a radiator/receptor;

means for power amplification.

5. 12. A single user outdoor unit, comprising:

at least one upstream signal generating means according to one of claims it to 1/1;

switching means for switching between frequency bands and polarizations for downstreams and between polarizations for upstreams;

means for connecting to a IF frequency level to be connected to an indoor unit.

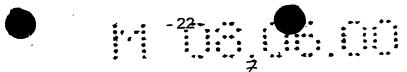
- 6- 13. A unit according to claim 12, further comprising means for remote control (e.g. DiSEqC™) for functions including at least power control and emergency shutoff.
- 7. 14. An indoor unit to be connected to an outdoor unit according to claim 12 or 13 or to an in-house distribution component, said indoor unit comprising:

receiving means for the reception of downstream signals;

demodulation means for demodulating the downstream signals;

modulation means for generating an upstream carrier based on a highposition beacon signal transmitted from a base station as a reference signal for the generation of said upstream carrier;

control means for generating switching commands.



8. 15. An indoor unit according to claim 14, further comprising one of the following:

means for exploiting base station commands to allocate upstream carriers and/or power;

means to control or shut off the upstream carrier power.

3. 16. An indoor unit according to one of claims 14 or 18, further comprising: an in-house distribution component, comprising: switching means for switching the connection between individual user indoor units and the outdoor unit.

70. 17. An indoor unit according to claim 18, wherein said switching means comprises means for bidirectional switching between the user indoor units and the outdoor unit.

11. 18. An indoor unit according to one of claims 18 or 17, wherein said in-house distribution component further comprises:

means for controlling the switching in response to signals received from said indoor unit;

means for connecting to an IF frequency level to be connected to said indoor unit.

12. A system according to one of claims 1 to 11, further comprising:

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1. A base station for broadcasting or re-broadcasting of TV and/or audio and/or data signals, said station comprising:

means for transmitting downstream signals from said base station to at least one user terminal;

means for receiving upstream signals transmitted from said at least one user terminal;

means for transmitting a high-precision beacon signal as reference signal for the generation of said upstream signals.

13. 2. A base station according to claim 1, wherein said base station forms a part of an LMDS provider-site distribution system, and wherein said base station of said system further comprises one or a combination of the following:

means for baseband processing, modulation, and power combination of downstream carriers and/or

means for block conversion and power amplification of downstream carriers as well as demodulation of arbitrary numbers of upstream carriers;

means for station management;

means for controlling interactively communication frequencies and power,

means for communication with adjacent cells and a remote service provider; means for communication with other networks like satellite and/or cable.

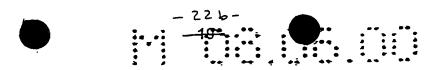
14. 3. A base station-according to one of the preceding claims, said base station comprising:

an upstream reception system with a stack of single demodulators comprising:

means for low noise amplification;

means for downconverting from RF to a first IF level;

means for power splitting;



a downconversion mixer bank for individual upstream carrier downconversion;

means for generating individual LO frequencies;

means for filtering;

a demodulator bank:

means for baseband processing to exploit the incoming demodulated upstream data.

15. A. A base station according to claim 3, further comprising means for arbitrarily configuring the demodulation mode.

76. 5. A base station according to one of claims X or 2, further comprising:

an upstream reception system with a multicarrier demodulator system comprising:

means for low noise amplification;

means for downconversion from RF to a first IF level;

means for quadrature downconversion;

means for sampling and for A/D-conversion for subsequent signal processing;

means for analytical multicarrier demodulation signal processing; means for baseband processing.

77. 6. A base station according to one of claims 1 or 2, said base station comprising:

an upstream reception system with a FFT demodulation system comprising: means for low noise amplification;

means for downconversion from RF to a first IF level;

means for quadrature downconversion;

means for sampling and for A/D-conversion for subsequent signal processing;

means for analytical FFT signal processing;

means for baseband processing.